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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09 596,755	06 15 2000	Hisashi Ohtani	07977.226002 US3548D1	3261

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EXAMINER

KUNEMUND, ROBERT M

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 11/21/2002

17

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/596,755

Applicant(s)

OHTANI, HISASHI

Examiner

Robert M Kunemund

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

15) ☐ The translation of the foreign language in the priority document is not a translation of the original.

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO 444)

17) ☐ Information Disclosure Statement(s) (PTO 1449) Paper No(s) \_\_\_\_\_

18) ☐ Notice of Informal Patent Application (PTO 102)

19) ☐ Other \_\_\_\_\_

20) ☐ Other \_\_\_\_\_

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*The Rejections*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2 to 48 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are not fully supported by the originally filed specification. The specification is limited to crystallization of silicon with a catalyst material. This limitation is not found in the instant claims. Thus, the claims contain material not found in the origin specification.

There is no support in the originally filed specification for the invention as is now claimed. There is no teaching in the specification concerning the relationship of the intensities of the two sets of infrared heaters.

Claims 2 to 19 do not recite the crystallization of amorphous silicon. The claims merely recite treating a layer, which is not limited to crystallization as is the specification. Thus, the claims are not supported by the specification.

Claims 46 to 48 are objected to under 37 CFR 1.75(c), as being of improper dependent

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cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claims recite at least two pairs of lights.

However, all the independent claims that claims 46 to 48 now recite the same limitations. Thus, claims 46 to 48 do not further limit the independent claims

The Following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 to 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. in view of Hirano et al (5,771,110), Sommer et al and Gill et al

The Nakajima et al reference teaches a method of crystallizing semiconductor material. On a substrate an amorphous layer is deposited by standard methods. A metal is then placed in contact with the amorphous layer. The metal promotes crystallization at lower temperatures. A laser or heat source is started at the place where the metal and the amorphous material are in contact to create a temperature gradient. The laser is then moved across the layer to crystallize the amorphous material by temperature gradients, note entire reference. The difference between the instant claims and the prior art is the heat source below and above the silicon and numbers of heat sources. However, the Hirano et al reference teaches the crystallization of silicon in devices, reference. The Sommer et al and Gill et al reference teach the use of multiple heating banks above

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and below the materials, note figures. It would have been obvious to one of ordinary skill in the art to modify the Nakajima et al reference by the teachings of Hirano et al, Sommer et al and Gill et al references to heat above and below in order to increase the speed of crystallization and increase control of the growth fronts and to use multiple heaters in order to allow for a preheating of the substance.

*Response to Applicants' Arguments*

Applicant's arguments filed September 6, 2002 have been fully considered but they are not persuasive.

Applicant's argument concerning the 112 first paragraph rejections is noted. However, the cite supplied by applicants only teaches activation of a dopant and repairing damages to the layer. This does not give support for crystallization of the silicon layer. Further, the specification clearly teaches that this is done to crystallized film, which is not claimed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any communication or earlier communications from the examiner should be directed to Robert Kuncmund whose telephone number is (703) 308-1091. The examiner can normally be reached on Monday through Friday from 7:00 to 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ben Utech, can be reached on (703) 308-3836. The fax phone number for this Group is (703) 305-6357.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.



ROBERT KUNCMUND  
DEPUTY EXAMINER

RMK

November 5, 2002